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YAN, HUA
SWORDS, KATHY

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<140> 10/561,785
<141> 2005-12-21

<150> PCT/US2004/017424
<151> 2004-06-25

<150> 10/607,538
<151> 2003-06-27

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<170> PatentIn version 3.5

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aacaacaaca acaacaacaa caataattat aatctcatac acgcaacgtg tagggagacc 120

ccatattact ccctatgtct caccacccta caatccggtc cacgtagtaa cgaggttgag 180

ggtggtgatg ccatcaccac cctaggcctc atcatggtgg acgcggtgaa atcaaagtcc 240

atagaaataa tggaaaaaat aaaagagcta gagaaatcga accctgagtg gcgggcccca 300

cttagccagt gttacgtggc gtataatgcc gtcctacgag ccgatgtaac ggtagccgtt 360

gaagccttaa agaagggtgc ccccaaattt gctgaagatg gtatggatga tgttgttgct 420

gaagcacaaa cttgtgagta tagttttaat tattataata aattggattt tccaatttct 480

aatttgagta gggaaataat tgaactatca aaagttgcta aatccataat tagaatgtta 540

ttatga 546

<210> 6
<211> 658
<212> DNA
<213> Solanum tuberosum

<400> 6
gaaccatgca tctcaatctt aatactaaaa aatgcaacaa aattctagtg gagggaccag 60

taccagtaca ttagatatta tcttttatta ctataataat attttaatta acacgagaca 120

taggaatgtc aagtggtagc ggtaggaggg agttggttca gtttttaga tactaggaga 180

cagaaccgga ggggcccatt gcaaggccca agttgaagtc cagccgtgaa tcaacaaaga 240

gagggcccat aatactgtcg atgagcattt ccctataata cagtgtccac agttgccttc 300

cgctaaggga tagccacccg ctattctctt gacacgtgtc actgaaacct gctacaaata 360

aggcaggcac ctcctcattc tcacactcac tcactcacac agctcaacaa gtggtaactt 420

ttactcatct cctccaatta tttctgattt catgcatgtt tccctacatt ctattatgaa 480

tcgtgttatg gtgtataaac gttgtttcat atctcatctc atctattctg attttgattc 540

tcttgcctac tgaatttgac cctactgtaa tcggtgataa atgtgaatgc ttcctcttct 600

tcttcttctt ctcagaaatc aatttctgtt ttgtttttgt tcatctgtag cttggtag 658

<210> 7
<211> 355
<212> DNA
<213> Solanum tuberosum

<400> 7
ttttaatgtt tagcaaatgt cctatcagtt ttctcttttt gtcgaacggt aatttagagt 60

ttttttgct atatggattt tcgtttttga tgtatgtgac aaccctcggg attgttgatt 120

tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttggatat caatcttagt 180

tttatatctt ttctagttct ctacgtgtta aatgttcaac acactagcaa tttggctgca 240

gcgtatggat tatggaacta tcaagtctgt gggatcgata aatatgcttc tcaggaattt 300

gagattttac agtctttatg ctcattgggt tgagtataat atagtaaaaa aatag 355

<210> 8
<211> 179
<212> DNA
<213> Solanum tuberosum

<400> 8
accttatttc actaccactt tccactctcc aatccccata ctctctgctc caatcttcat 60

tttgcttcgt gaattcatct tcatcgaatt tctcgacgct tcttcgctaa tttcctcgtt 120

acttcactaa aaatcgacgt ttctagctga acttgagtga attaagccag tgggaggat 179

<210> 9
<211> 569
<212> DNA
<213> Solanum tuberosum

<400> 9
gttagaaatc ttctctattt ttggtttttg tctgtttaga ttctcgaatt agctaatcag 60

gtgctgttat agcccttaat tttgagtttt ttttcggttg ttttgatgga aaaggcctaa 120

aatttgagtt tttttacgtt ggtttgatgg aaaaggccta caattggagt tttccccgtt 180

gttttgatga aaaagcccct agtttgagat tttttttctg tcgattcgat tctaaaggtt 240

taaaattaga gtttttacat ttgtttgatg aaaaaggcct taaatttgag tttttccggt 300

tgatttgatg aaaaagccct agaatttgtg ttttttcgtc ggtttgattc tgaaggccta 360

aaatttgagt ttctccggct gttttgatga aaaagcccta aatttgagtt tctccggctg 420

ttttgatgaa aaagccctaa atttgagttt tttccccgtg ttttagattg tttggtttta 480

attctcgaat cagctaatca gggagtgtga aaagccctaa aatttgagtt tttttcgttg 540

ttctgattgt tgtttttatg aatttgcag 569

<210> 10
<211> 1738
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 10
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

ccaccttatt tcactaccac tttccactct ccaatcccca tactctctgc tccaatcttc 480

attttgcttc gtgaattcat cttcatcgaa tttctcgacg cttcttcgct aatttcctcg 540

ttacttcact agaaatcgac gtttctagct gaacttgagt gaattaagcc agtgggagga 600

tgaattcaag gttagaaatc ttctctattt ttggtttttg tctgtttaga ttctcgaatt 660

agctaatcag gtgctgttat agcccttaat tttgagtttt ttttcggttg ttttgatgga 720

aaaggcctaa aatttgagtt tttttacgtt ggtttgatgg aaaaggccta caattggagt 780

tttccccgtt gttttgatga aaaagcccct agtttgagat tttttttctg tcgattcgat 840

tctaaaggtt taaaattaga gtttttacat ttgtttgatg aaaaaggcct taaatttgag 900

tttttccggt tgatttgatg aaaaagccct agaatttgtg ttttttcgtc ggtttgattc 960

tgaaggccta aaatttgagt ttctccggct gttttgatga aaaagcccta aatttgagtt 1020

tctccggctg ttttgatgaa aaagccctaa atttgagttt tttccccgtg ttttagattg 1080

tttggtttta attctcgaat cagctaatca gggagtgtga aaagccctaa aatttgagtt 1140

tttttcgttg ttctgattgt tgtttttatg aatttgcaga tggatatcat cctcccactg 1200

gcttaattca ctcaagttca gctagaaacg tcgatttcta gtgaagtaac gaggaaatta 1260

gcgaagaagc gtcgagaaat tcgatgaaga tgaattcacg aagcaaaatg aagattggag 1320

cagagagtat ggggattgga gagtggaaag tggtagtgaa ataaggtaag cttttgattt 1380

taatgtttag caaatgtcct atcagttttc tctttttgtc gaacggtaat ttagagtttt 1440

ttttgctata tggattttcg tttttgatgt atgtgacaac cctcgggatt gttgatttat 1500

ttcaaaacta agagtttttg cttattgttc tcgtctattt tggatatcaa tcttagtttt 1560

atatcttttc tagttctcta cgtgttaaat gttcaacaca ctagcaattt ggctgcagcg 1620

tatggattat ggaactatca agtctgtggg atcgataaat atgcttctca ggaatttgag 1680

attttacagt ctttatgctc attgggttga gtataatata gtaaaaaaat agtctaga 1738

<210> 11
<211> 237
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 11
gtaactttta ctcatctcct ccaattattt ctgatttcat gcatgtttcc ctacattcta 60

ttatgaatcg tgttatggtg tataaacgtt gtttcatatc tcatctcatc tattctgatt 120

ttgattctct tgcctactga atttgaccct actgtaatcg gtgataaatg tgaatgcttc 180

ctcttcttct tcttcttctc agaaatcaat ttctgttttg tttttgttca tctgtag 237

<210> 12
<211> 1406
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 12
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

ccaccttatt tcactaccac tttccactct ccaatcccca tactctctgc tccaatcttc 480

attttgcttc gtgaattcat cttcatcgaa tttctcgacg cttcttcgct aatttcctcg 540

ttacttcact agaaatcgac gtttctagct gaacttgagt gaattaagcc agtgggagga 600

tgaattcgtg gtaactttta ctcatctcct ccaattattt ctgatttcat gcatgtttcc 660

ctacattcta ttatgaatcg tgttatggtg tataaacgtt gtttcatatc tcatctcatc 720

tattctgatt ttgattctct tgcctactga atttgaccct actgtaatcg gtgataaatg 780

tgaatgcttc ctcttcttct tcttcttctc agaaatcaat ttctgttttg tttttgttca 840

tctgtagctt gatatcatcc tcccactggc ttaattcact caagttcagc tagaaacgtc 900

gatttctagt gaagtaacga ggaaattagc gaagaagcgt cgagaaattc gatgaagatg 960

aattcacgaa gcaaaatgaa gattggagca gagagtatgg ggattggaga gtggaaagtg 1020

gtagtgaaat aaggtaagct tttgatttta atgtttagca aatgtcctat cagttttctc 1080

tttttgtcga acggtaattt agagtttttt ttgctatatg gattttcgtt tttgatgtat 1140

gtgacaaccc tcgggattgt tgatttattt caaaactaag agtttttgct tattgttctc 1200

gtctattttg gatatcaatc ttagttttat atcttttcta gttctctacg tgttaaatgt 1260

tcaacacact agcaatttgg ctgcagcgta tggattatgg aactatcaag tctgtgggat 1320

cgataaatat gcttctcagg aatttgagat tttacagtct ttatgctcat tgggttgagt 1380

ataatatagt aaaaaaatag tctaga 1406

<210> 13
<211> 686
<212> DNA
<213> Solanum tuberosum

<400> 13
gaaccatgca tctcaatctt aatactaaaa aatgcaacaa aattctagtg gagggaccag 60

taccagtaca ttagatatta tcttttatta ctataataat attttaatta acacgagaca 120

taggaatgtc aagtggtagc ggtaggaggg agttggttca gttttttaga tactaggaga 180

cagaaccgga ggggcccatt gcaaggccca agttgaagtc cagccgtgaa tcaacaaaga 240

gagggcccat aatactgtcg atgagcattt ccctataata cagtgtccac agttgccttc 300

cgctaaggga tagccacccg ctattctctt gacacgtgtc actgaaacct gctacaaata 360

aggcaggcac ctcctcattc tcacactcac tcactcacac agctcaacaa gtggtaactt 420

ttactcatct cctccaatta tttctgattt catgcatgtt tccctacatt ctattatgaa 480

tcgtgttatg gtgtataaac gttgtttcat atctcatctc atctattctg attttgattc 540

tcttgcctac tgaatttgac cctactgtaa tcggtgataa atgtgaatgc ttcctcttct 600

tcttcttctt ctcagaaatc aatttctgtt ttgtttttgt tcatctgtag cttggtagat 660

tccccttttt gtagaccaca catcac 686

<210> 14
<211> 2046
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 14
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480

tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540

gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600

attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtatgata 660

tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720

attatgcact gaataatacc gcagcatcaa agaaggaatt caaggttaga aatcttctct 780

atttttggtt tttgtctgtt tagattctcg aattagctaa tcaggtgctg ttatagccct 840

taattttgag ttttttttcg gttgttttga tggaaaaggc ctaaaatttg agtttttta 900

cgttggtttg atggaaaagg cctacaattg gagttttccc cgttgttttg atgaaaaagc 960

ccctagtttg agatttttt tctgtcgatt cgattctaaa ggtttaaaat tagagttttt 1020

acatttgttt gatgaaaaag gccttaaatt tgagtttttc cggttgattt gatgaaaaag 1080

ccctagaatt tgtgtttttt cgtcggtttg attctgaagg cctaaaattt gagtttctcc 1140

ggctgttttg atgaaaaagc cctaaatttg agtttctccg gctgttttga tgaaaaagcc 1200

ctaaatttga gttttttccc cgtgttttag attgtttggt tttaattctc gaatcagcta 1260

atcagggagt gtgaaaagcc ctaaaatttg agtttttttc gttgttctga ttgttgtttt 1320

tatgaatttg cagatggata tccttctttg atgctgcggt attattcagt gcataatgca 1380

atacataatg cgtgtgtata tactatatat agtacaatgt ttacacattt ctccctatat 1440

catacccagc taatttagct tttacaaagt ttttcttatt attcctcata ttgcaattcc 1500

tacttctcac ttctcctcca atagctgaag gtgaacatga tgtgatggct ttggatcacg 1560

tataatcata caggtaactt catgggaggt atcaggtaag tggtcacaga tctgatacaa 1620

tgagaatatg atcacatctg tggtcttctc tgaacaacat acaactagaa tatgaaagct 1680

tttgatttta atgtttagca aatgtcctat cagttttctc tttttgtcga acggtaattt 1740

agagtttttt ttgctatatg gattttcgtt tttgatgtat gtgacaaccc tcgggattgt 1800

tgatttattt caaaactaag agtttttgct tattgttctc gtctattttg gatatcaatc 1860

ttagttttat atcttttcta gttctctacg tgttaaatgt tcaacacact agcaatttgg 1920

ctgcagcgta tggattatgg aactatcaag tctgtgggat cgataaatat gcttctcagg 1980

aatttgagat tttacagtct ttatgctcat tgggttgagt ataatatagt aaaaaaatag 2040

tctaga 2046

<210> 15
<211> 1714
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 15
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480

tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540

gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600

attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtatgata 660

tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720

attatgcact gaataatacc gcagcatcaa agaaggaatt cgtggtaact tttactcatc 780

tcctccaatt atttctgatt tcatgcatgt ttccctacat tctattatga atcgtgttat 840

ggtgtataaa cgttgtttca tatctcatct catctattct gattttgatt ctcttgccta 900

ctgaatttga ccctactgta atcggtgata aatgtgaatg cttcctcttc ttcttcttct 960

tctcagaaat caatttctgt tttgtttttg ttcatctgta gcttgatatc cttctttgat 1020

gctgcggtat tattcagtgc ataatgcaat acataatgcg tgtgtatata ctatatatag 1080

tacaatgttt acacatttct ccctatatca tacccagcta atttagcttt tacaaagttt 1140

ttcttattat tcctcatatt gcaattccta cttctcactt ctcctccaat agctgaaggt 1200

gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggaggtat 1260

caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg 1320

aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgtcctatca 1380

gttttctctt tttgtcgaac ggtaatttag agtttttttt gctatatgga ttttcgtttt 1440

tgatgtatgt gacaaccctc gggattgttg atttatttca aaactaagag tttttgctta 1500

ttgttctcgt ctattttgga tatcaatctt agttttatat cttttctagt tctctacgtg 1560

ttaaatgttc aacacactag caatttggct gcagcgtatg gattatggaa ctatcaagtc 1620

tgtgggatcg ataaatatgc ttctcaggaa tttgagattt tacagtcttt atgctcattg 1680

ggttgagtat aatatagtaa aaaaatagtc taga 1714

<210> 16
<211> 333
<212> DNA
<213> Solanum tuberosum

<400> 16
tcatattcta gttgtatgtt gttcagagaa gaccacagat gtgatcatat tctcattgta 60

tcagatctgt gaccacttac ctgatacctc ccatgaagtt acctgtatga ttatacgtga 120

tccaaagcca tcacatcatg ttcaccttca gctattggag gagaagtgag aagtaggaat 180

tgcaatatga ggaataataa gaaaaacttt gtaaaagcta aattagctgg gtatgatata 240

gggagaaatg tgtaaacatt gtactatata tagtatatac acacgcatta tgtattgcat 300

tatgcactga ataataccgc agcatcaaag aag 333

<210> 17
<211> 2046
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 17
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480
tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540
gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtatgata 660
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720
attatgcact gaataatacc gcagcatcaa agaaggaatt caaggttaga aatcttctct 780
atttttggtt tttgtctgtt tagattctcg aattagctaa tcaggtgctg ttatagccct 840
taattttgag ttttttttcg gttgttttga tggaaaaggc ctaaaatttg agtttttta 900
cgttggtttg atggaaaagg cctacaattg gagttttccc cgttgttttg atgaaaaagc 960
ccctagtttg agatttttt tctgtcgatt cgattctaaa ggtttaaaat tagagttttt 1020
acatttgttt gatgaaaaag gccttaaatt tgagtttttc cggttgattt gatgaaaaag 1080
ccctagaatt tgtgtttttt cgtcggtttg attctgaagg cctaaaattt gagtttctcc 1140
ggctgttttg atgaaaaagc cctaaatttg agtttctccg gctgttttga tgaaaaagcc 1200
ctaaatttga gttttttccc cgtgttttag attgtttggt tttaattctc gaatcagcta 1260
atcagggagt gtgaaaagcc ctaaaatttg agtttttttc gttgttctga ttgttgtttt 1320
tatgaatttg cagatggata tccttctttg atgctgcggt attattcagt gcataatgca 1380
atacataatg cgtgtgtata tactatatat agtacaatgt ttacacattt ctccctatat 1440
catacccagc taatttagct tttacaaagt ttttcttatt attcctcata ttgcaattcc 1500
tacttctcac ttctcctcca atagctgaag gtgaacatga tgtgatggct ttggatcacg 1560
tataatcata caggtaactt catgggaggt atcaggtaag tggtcacaga tctgatacaa 1620
tgagaatatg atcacatctg tggtcttctc tgaacaacat acaactagaa tatgaaagct 1680
tttgatttta atgtttagca aatgtcctat cagttttctc tttttgtcga acggtaattt 1740
agagtttttt ttgctatatg gattttcgtt tttgatgtat gtgacaaccc tcgggattgt 1800
tgatttattt caaaactaag agtttttgct tattgttctc gtctattttg gatatcaatc 1860
ttagttttat atcttttcta gttctctacg tgttaaatgt tcaacacact agcaatttgg 1920
ctgcagcgta tggattatgg aactatcaag tctgtgggat cgataaatat gcttctcagg 1980
aatttgagat tttacagtct ttatgctcat tgggttgagt ataatatagt aaaaaaatag 2040

tctaga 2046

<210> 18
<211> 1714
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 18
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480

tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540

gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600

attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtatgata 660

tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720

attatgcact gaataatacc gcagcatcaa agaaggaatt cgtggtaact tttactcatc 780

tcctccaatt atttctgatt tcatgcatgt ttccctacat tctattatga atcgtgttat 840

ggtgtataaa cgttgtttca tatctcatct catctattct gattttgatt ctcttgccta 900

ctgaatttga ccctactgta atcggtgata aatgtgaatg cttcctcttc ttcttcttct 960

tctcagaaat caatttctgt tttgtttttg ttcatctgta gcttgatatc cttctttgat 1020

gctgcggtat tattcagtgc ataatgcaat acataatgcg tgtgtatata ctatatatag 1080

tacaatgttt acacatttct ccctatatca tacccagcta atttagcttt tacaaagttt 1140

ttcttattat tcctcatatt gcaattccta cttctcactt ctcctccaat agctgaaggt 1200

gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggaggtat 1260

caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg 1320

aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgtcctatca 1380

gttttctctt tttgtcgaac ggtaatttag agtttttttt gctatatgga ttttcgtttt 1440

tgatgtatgt gacaaccctc gggattgttg atttatttca aaactaagag tttttgctta 1500

ttgttctcgt ctattttgga tatcaatctt agttttatat cttttctagt tctctacgtg 1560

ttaaatgttc aacacactag caatttggct gcagcgtatg gattatggaa ctatcaagtc 1620

tgtgggatcg ataaatatgc ttctcaggaa tttgagattt tacagtcttt atgctcattg 1680

ggttgagtat aatatagtaa aaaaatagtc taga 1714

<210> 19
<211> 2322
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 19
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420

taacttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat 480

tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt 540

tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600

tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660

gtagattccc ctttttgtag accacacatc acggatcctc atattctagt tgtatgttgt 720

tcagagaaga ccacagatgt gatcatattc tcattgtatc agatctgtga ccacttacct 780

gatacctccc atgaagttac ctgtatgatt atacgtgatc caaagccatc acatcatgtt 840

caccttcagc tattggagga gaagtgagaa gtaggaattg caatatgagg aataataaga 900

aaaactttgt aaaagctaaa ttagctgggt atgatatagg gagaaatgtg taaacattgt 960

actatatata gtatatacac acgcattatg tattgcatta tgcactgaat aataccgcag 1020

catcaaagaa ggaattcaag gttagaaatc ttctctattt ttggtttttg tctgtttaga 1080

ttctcgaatt agctaatcag gtgctgttat agcccttaat tttgagtttt ttttcggttg 1140

ttttgatgga aaaggcctaa aatttgagtt tttttacgtt ggtttgatgg aaaaggccta 1200

caattggagt tttccccgtt gttttgatga aaaagcccct agtttgagat tttttttctg 1260

tcgattcgat tctaaaggtt taaaattaga gtttttacat ttgtttgatg aaaaaggcct 1320

taaatttgag tttttccggt tgatttgatg aaaaagccct agaatttgtg ttttttcgtc 1380

ggtttgattc tgaaggccta aaatttgagt ttctccggct gttttgatga aaaagcccta 1440

aatttgagtt tctccggctg ttttgatgaa aaagccctaa atttgagttt tttccccgtg 1500

ttttagattg tttggtttta attctcgaat cagctaatca gggagtgtga aaagccctaa 1560

aatttgagtt tttttcgttg ttctgattgt tgtttttatg aatttgcaga tggatatcct 1620

tctttgatgc tgcggtatta ttcagtgcat aatgcaatac ataatgcgtg tgtatatact 1680

atatatagta caatgtttac acatttctcc ctatatcata cccagctaat ttagctttta 1740

caaagttttt cttattattc ctcatattgc aattcctact tctcacttct cctccaatag 1800

ctgaaggtga acatgatgtg atggctttgg atcacgtata atcatacagg taacttcatg 1860

ggaggtatca ggtaagtggt cacagatctg atacaatgag aatatgatca catctgtggt 1920

cttctctgaa caacatacaa ctagaatatg aaagcttttg attttaatgt ttagcaaatg 1980

tcctatcagt tttctctttt tgtcgaacgg taatttagag ttttttttgc tatatggatt 2040

ttcgtttttg atgtatgtga caaccctcgg gattgttgat ttatttcaaa actaagagtt 2100

tttgcttatt gttctcgtct attttggata tcaatcttag ttttatatct tttctagttc 2160

tctacgtgtt aaatgttcaa cacactagca atttggctgc agcgtatgga ttatggaact 2220

atcaagtctg tgggatcgat aaatatgctt ctcaggaatt tgagatttta cagtctttat 2280

gctcattggg ttgagtataa tatagtaaaa aaatagtcta ga 2322

<210> 20
<211> 1714
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 20
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480

tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540

gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600

attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtatgata 660

tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720

attatgcact gaataatacc gcagcatcaa agaaggaatt cgtggtaact tttactcatc 780

tcctccaatt atttctgatt tcatgcatgt ttccctacat tctattatga atcgtgttat 840

ggtgtataaa cgttgtttca tatctcatct catctattct gattttgatt ctcttgccta 900

ctgaatttga ccctactgta atcggtgata aatgtgaatg cttcctcttc ttcttcttct 960

tctcagaaat caatttctgt tttgtttttg ttcatctgta gcttgatatc cttctttgat 1020

gctgcggtat tattcagtgc ataatgcaat acataatgcg tgtgtatata ctatatatag 1080

tacaatgttt acacatttct ccctatatca tacccagcta atttagcttt tacaaagttt 1140

ttcttattat tcctcatatt gcaattccta cttctcactt ctcctccaat agctgaaggt 1200

gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggaggtat 1260

caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg 1320

aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgtcctatca 1380

gttttctctt tttgtcgaac ggtaatttag agttttttt gctatatgga ttttcgtttt 1440

tgatgtatgt gacaaccctc gggattgttg atttatttca aaactaagag tttttgctta 1500

ttgttctcgt ctattttgga tatcaatctt agttttatat cttttctagt tctctacgtg 1560

ttaaatgttc aacacactag caatttggct gcagcgtatg gattatggaa ctatcaagtc 1620

tgtgggatcg ataaatatgc ttctcaggaa tttgagattt tacagtcttt atgctcattg 1680

ggttgagtat aatatagtaa aaaaatagtc taga 1714

<210> 21
<211> 273
<212> DNA
<213> Solanum tuberosum

<400> 21
ttagagtgtg ggtaagtaat taagttaggg atttgtggga aatggacaaa tataagagag 60

tgcaggggag tagtgcagga gattttcgtg cttttattga taaataaaaa aagggtgaca 120

tttaatttcc acaagaggac gcaacacaac acacttaatt cctgtgtgtg aatcaataat 180

tgacttctcc aatcttcatc aataaaataa ttcacaatcc tcactctctt atcactctca 240

ttcgaaaagc tagatttgca tagagagcac aaa 273

<210> 22
<211> 158
<212> DNA
<213> Solanum tuberosum

<400> 22
gaggggggaag tgaatgaaaa ataacaaagg cacagtaagt agtttctctt tttatcatgt 60

gatgaaggta tataatgtat gtgtaagagg atgatgttat taccacataa taagagatga 120

agagtctcat tttctgctta aaaaaacaat tcactggc 158

<210> 23
<211> 1917
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 23
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
ccgagtgtgg gtaagtaatt aagttaggga tttgtgggaa atggacaaat ataagagagt 480
gcaggggagt agtgcaggag attttcgtgc ttttattgat aaataaaaaa agggtgacat 540
ttaatttcca caagaggacg caacacaaca cacttaattc ctgtgtgtga atcaataatt 600
gacttctcca atcttcatca ataaaataat tcacaatcct cactctctta tcactctcat 660
tcgaaaagct agatttgcat agagagcaca gaattcaagg ttagaaatct tctctatttt 720
tggtttttgt ctgtttagat tctcgaatta gctaatcagg tgctgttata gcccttaatt 780
ttgagttttt tttcggttgt tttgatggaa aaggcctaaa atttgagttt ttttacgttg 840
gtttgatgga aaaggcctac aattggagtt ttccccgttg ttttgatgaa aaagccccta 900
gtttgagatt ttttttctgt cgattcgatt ctaaaggttt aaaattagag tttttacatt 960
tgtttgatga aaaaggcctt aaatttgagt ttttccggtt gatttgatga aaaagcccta 1020
gaatttgtgt tttttcgtcg gtttgattct gaaggcctaa aatttgagtt tctccggctg 1080
ttttgatgaa aaagccctaa atttgagttt ctccggctgt tttgatgaaa aagccctaaa 1140
tttgagtttt ttccccgtgt tttagattgt ttggttttaa ttctcgaatc agctaatcag 1200
ggagtgtgaa aagccctaaa atttgagttt ttttcgttgt tctgattgtt gtttttatga 1260
atttgcagat ggatatctgt gctctctatg caaatctagc ttttcgaatg agagtgataa 1320
gagagtgagg attgtgaatt attttattga tgaagattgg agaagtcaat tattgattca 1380
cacacaggaa ttaagtgtgt tgtgttgcgt cctcttgtgg aaattaaatg tcacccttt 1440
tttatttatc aataaaagca cgaaaatctc ctgcactact cccctgcact ctcttatatt 1500
tgtccatttc ccacaaatcc ctaacttaat tacttaccca cactctaagc ttttgatttt 1560
aatgtttagc aaatgtccta tcagttttct ctttttgtcg aacggtaatt tagagttttt 1620
tttgctatat ggattttcgt ttttgatgta tgtgacaacc ctcgggattg ttgatttatt 1680
tcaaaactaa gagtttttgc ttattgttct cgtctatttt ggatatcaat cttagtttta 1740
tatcttttct agttctctac gtgttaaatg ttcaacacac tagcaatttg gctgcagcgt 1800
atggattatg gaactatcaa gtctgtggga tcgataaata tgcttctcag gaatttgaga 1860
ttttacagtc tttatgctca ttgggttgag tataatatag taaaaaaata gtctaga 1917

<210> 24
<211> 1585
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 24
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
ccgagtgtgg gtaagtaatt aagttaggga tttgtgggaa atggacaaat ataagagagt 480
gcaggggagt agtgcaggag attttcgtgc ttttattgat aaataaaaaa agggtgacat 540
ttaatttcca caagaggacg caacacaaca cacttaattc ctgtgtgtga atcaataatt 600
gacttctcca atcttcatca ataaaataat tcacaatcct cactctctta tcactctcat 660
tcgaaaagct agatttgcat agagagcaca gaattcgtgg taacttttac tcatctcctc 720
caattatttc tgatttcatg catgtttccc tacattctat tatgaatcgt gttatggtgt 780
ataaacgttg tttcatatct catctcatct attctgattt tgattctctt gcctactgaa 840
tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc tcttcttctt cttcttctca 900
gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg atatctgtgc tctctatgca 960
aatctagctt ttcgaatgag agtgataaga gagtgaggat tgtgaattat tttattgatg 1020
aagattggag aagtcaatta ttgattcaca cacaggaatt aagtgtgttg tgttgcgtcc 1080
tcttgtggaa attaaatgtc acccttttt tatttatcaa taaaagcacg aaaatctcct 1140
gcactactcc cctgcactct cttatatttg tccatttccc acaaatccct aacttaatta 1200
cttacccaca ctctaagctt ttgattttaa tgtttagcaa atgtcctatc agttttctct 1260
ttttgtcgaa cggtaattta gagtttttt tgctatatgg attttcgttt ttgatgtatg 1320
tgacaaccct cgggattgtt gatttatttc aaaactaaga gtttttgctt attgttctcg 1380
tctattttgg atatcaatct tagttttata tcttttctag ttctctacgt gttaaatgtt 1440
caacacacta gcaatttggc tgcagcgtat ggattatgga actatcaagt ctgtgggatc 1500
gataaatatg cttctcagga atttgagatt ttacagtctt tatgctcatt gggttgagta 1560
taatatagta aaaaaatagt ctaga 1585

<210> 25
<211> 2193
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 25
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420
taacttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat 480
tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt 540
tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600
tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660
gtagattccc ctttttgtag accacacatc acggatccga gtgtgggtaa gtaattaagt 720
tagggatttg tgggaaatgg acaaatataa gagagtgcag gggagtagtg caggagattt 780
tcgtgctttt attgataaat aaaaaaaggg tgacatttaa tttccacaag aggacgcaac 840
acaacacact taattcctgt gtgtgaatca ataattgact tctccaatct tcatcaataa 900
aataattcac aatcctcact ctcttatcac tctcattcga aaagctagat ttgcatagag 960
agcacagaat tcaaggttag aaatcttctc tatttttggt ttttgtctgt ttagattctc 1020
gaattagcta atcaggtgct gttatagccc ttaattttga gttttttttc ggttgttttg 1080
atggaaaagg cctaaaattt gagtttttt acgttggttt gatggaaaag gcctacaatt 1140
ggagttttcc ccgttgtttt gatgaaaaag cccctagttt gagatttttt ttctgtcgat 1200
tcgattctaa aggtttaaaa ttagagtttt tacatttgtt tgatgaaaaa ggccttaaat 1260
ttgagttttt ccggttgatt tgatgaaaaa gccctagaat ttgtgttttt tcgtcggttt 1320
gattctgaag gcctaaaatt tgagtttctc cggctgtttt gatgaaaaag ccctaaattt 1380
gagtttctcc ggctgttttg atgaaaaagc cctaaatttg agtttttttcc ccgtgtttta 1440
gattgtttgg ttttaattct cgaatcagct aatcagggag tgtgaaaagc cctaaaattt 1500
gagtttttt cgttgttctg attgttgttt ttatgaattt gcagatggat atctgtgctc 1560
tctatgcaaa tctagctttt cgaatgagag tgataagaga gtgaggattg tgaattattt 1620
tattgatgaa gattggagaa gtcaattatt gattcacaca caggaattaa gtgtgttgtg 1680
ttgcgtcctc ttgtggaaat taaatgtcac cctttttta tttatcaata aaagcacgaa 1740
aatctcctgc actactcccc tgcactctct tatatttgtc catttcccac aaatccctaa 1800
cttaattact tacccacact ctaagctttt gattttaatg tttagcaaat gtcctatcag 1860
ttttctcttt ttgtcgaacg gtaatttaga gttttttttg ctatatggat tttcgttttt 1920
gatgtatgtg acaaccctcg ggattgttga tttatttcaa aactaagagt ttttgcttat 1980
tgttctcgtc tattttggat atcaatctta gttttatatc ttttctagtt ctctacgtgt 2040
taaatgttca acacactagc aatttggctg cagcgtatgg attatggaac tatcaagtct 2100
gtgggatcga taaatatgct tctcaggaat ttgagatttt acagtcttta tgctcattgg 2160
gttgagtata atatagtaaa aaaatagtct aga 2193

<210> 26
<211> 1861
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 26
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420

taacttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat 480

tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt 540

tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600

tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660

gtagattccc ctttttgtag accacacatc acggatccga gtgtgggtaa gtaattaagt 720

tagggatttg tgggaaatgg acaaatataa gagagtgcag gggagtagtg caggagattt 780

tcgtgctttt attgataaat aaaaaaaggg tgacatttaa tttccacaag aggacgcaac 840

acaacacact taattcctgt gtgtgaatca ataattgact tctccaatct tcatcaataa 900

aataattcac aatcctcact ctcttatcac tctcattcga aaagctagat ttgcatagag 960

agcacagaat tcgtggtaac ttttactcat ctcctccaat tatttctgat ttcatgcatg 1020

tttccctaca ttctattatg aatcgtgtta tggtgtataa acgttgtttc atatctcatc 1080

tcatctattc tgattttgat tctcttgcct actgaatttg accctactgt aatcggtgat 1140

aaatgtgaat gcttcctctt cttcttcttc ttctcagaaa tcaatttctg ttttgttttt 1200

gttcatctgt agcttgatat ctgtgctctc tatgcaaatc tagcttttcg aatgagagtg 1260

ataagagagt gaggattgtg aattatttta ttgatgaaga ttggagaagt caattattga 1320

ttcacacaca ggaattaagt gtgttgtgtt gcgtcctctt gtggaaatta aatgtcaccc 1380

ttttttttatt tatcaataaa agcacgaaaa tctcctgcac tactcccctg cactctctta 1440

tatttgtcca tttcccacaa atccctaact taattactta cccacactct aagcttttga 1500

ttttaatgtt tagcaaatgt cctatcagtt ttctcttttt gtcgaacggt aatttagagt 1560

ttttttttgct atatggattt tcgtttttga tgtatgtgac aaccctcggg attgttgatt 1620

tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttggatat caatcttagt 1680

tttatatctt ttctagttct ctacgtgtta aatgttcaac acactagcaa tttggctgca 1740

gcgtatggat tatggaacta tcaagtctgt gggatcgata aatatgcttc tcaggaattt 1800

gagattttac agtctttatg ctcattgggt tgagtataat atagtaaaaa aatagtctag 1860

a 1861

<210> 27
<211> 1788
<212> DNA
<213> Solanum tuberosum

<400> 27
atggcaagct tgtgcaatag tagtagtaca tctctcaaaa ctccttttac ttcttcctcc 60
acttctttat cttccactcc taagccctct caacttttca tccatggaaa acgtaaccaa 120
atgttcaaag tttcatgcaa ggttatcaat aataacggtg accaaaacgt tgaaacgaat 180
tctgttgatc gaagaaatgt tcttcttggc ttaggtggtc tttatggtgt tgctaatgct 240
ataccattag ctgcatccgc tgctccaact ccacctcctg atctctcgtc ttgtagtata 300
gccaggatta acgaaaatca ggtggtgccg tacagttgtt gcgcgcctaa gcctgatgat 360
atggagaaag ttccgtatta caagttccct tctatgacta agctccgtgt ccgtcagcct 420
gctcatgaag ctaatgagga gtatattgcc aagtacaatc tggcgattag tcgaatgaga 480
gatcttgata agacacaacc tttaaaccct attggtttta agcaacaagc taatatacat 540
tgtgcttatt gtaatggtgc ttatagaatt ggtggcaaag agttacaagt tcataattct 600
tggcttttct tcccgttcca tagatggtac ttgtacttcc acgagagaat cgtgggaaaa 660
ttcattgatg atccaacttt cgctttgcca tattggaatt gggaccatcc aaagggtatg 720
cgttttcctg ccatgtatga tcgtgaaggg acttcccttt tcgatgtaac acgtgaccaa 780
agtcaccgaa atggagcagt aatcgatctt ggtttttttcg gcaatgaagt cgaaacaact 840
caactccagt tgatgagcaa taatttaaca ctaatgtacc gtcaaatggt aactaatgct 900
ccatgtcctc ggatgttctt tggtgggcct tatgatctcg ggattaacac tgaactcccg 960
ggaactatag aaaacattcc tcacggtcct gtccacatct ggtctggtac agtgagaggt 1020
tcaactttgc ccaatggtgc aatatcaaac ggtgagaata tgggtcattt ttactcagct 1080
gctttggacc cggttttctt ttgccatcac agcaatgtgg atcggatgtg gagcgaatgg 1140
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tttttctatg atgaaaatga aaacccttac cgtgtgaaag tccgagactg tttggacacg 1260
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acaaaaacta cagctgggaa agtgaataca gcttctcttc cgccagctag caatgtattc 1380
ccagtggcta aactcgacaa agcaatttcg ttttccatca ataggccgac ttcgtcaagg 1440
actcaacaag agaaaaatgc acaagaggag atgttgacat tcagtagcat aagatatgat 1500
aacagagggt acataaggtt cgatgtgttc ctgaacgtgg acaataatgt gaatgcgaat 1560
gagcttgaca aggcggagtt tgcggggagt tatactagtt tgccacatgt tcatagagct 1620
ggtgagacta atcatatcgc gactgttgat ttccagctgg cgataacgga actgttggag 1680
gatattggtt tggaagatga agatactatt gcggtgactc tggtgccaaa gagaggtggt 1740
gaaggtatct ccattgaaag tgcgacgatc agtcttgcag attgttaa 1788

<210> 28

<211> 1788
<212> DNA
<213> Solanum tuberosum

<400> 28
atggcaagct tgtgcaatag tagtagtaca tctctcaaaa ctccttttac ttcttcctcc 60

acttctttat cttccactcc taagccctct caacttttca tccatggaaa acgtaaccaa 120

atgttcaaag tttcatgcaa ggttatcaat aataacggtg accaaaacgt tgaaacgaat 180

tctgttgatc gaagaaatgt tcttcttggc ttaggtggtc tttatggtgt tgctaatgct 240

ataccattag ctgcatccgc tgctccaact ccacctcctg atctctcgtc ttgtagtata 300

gccaggatta acgaaaatca ggtggtgccg tacagttgtt gcgcgcctaa gcctgatgat 360

atggagaaag ttccgtatta caagttccct tctatgacta agctccgtgt ccgtcagcct 420

gctcatgaag ctaatgagga gtatattgcc aagtacaatc tggcgattag tcgaatgaga 480

gatcttgata agacacaacc tttaaaccct attggtttta agcaacaagc taatatacag 540

tgggcttatg gtaatggtgc ttatagaatt ggtggcaaag agttacaagt tcataattct 600

tggcttttct tcccgttcca tagatggtac ttgtacttcc acgagagaat cgtgggaaaa 660

ttcattgatg atccaacttt cgctttgcca tattggaatt gggaccatcc aaagggtatg 720

cgttttcctg ccatgtatga tcgtgaaggg acttcccttt tcgatgtaac acgtgaccaa 780

agtcaccgaa atggagcagt aatcgatctt ggtttttcg gcaatgaagt cgaaacaact 840

caactccagt tgatgagcaa taatttaaca ctaatgtacc gtcaaatggt aactaatgct 900

ccatgtcctc ggatgttctt tggtgggcct tatgatctcg ggattaacac tgaactcccg 960

ggaactatag gaaacattcc tctcggtcct gtccacatct ggtctggtac agtgagaggt 1020

tcaactttgc ccaatggtgc aatatcaaac ggtgagaata tgggtcattt ttactcagct 1080

gctttggacc cggttttctt ttgccatcac agcaatgtgg atcggatgtg gagcgaatgg 1140

aaagcgacag gagggaaaag aacagatatc acacataaag gttggttgaa ctccgagttc 1200

tttttctatg atgaaaatga aaacccttac cgtgtgaaag tccgagactg tttggacacg 1260

aagaagatgg ggtatgatta tgcaccaatg gccaccccgt ggcgtaactt caagccaata 1320

acaaaaacta cagctgggaa agtgaataca gcttctcttc cgccagctag caatgtattc 1380

ccagtggcta aactcgacaa agcaatttcg ttttccatca ataggccgac ttcgtcaagg 1440

actcaacaag agaaaaatgc acaagaggag atgttgacat tcagtagcat aagatatgat 1500

aacagagggt acataaggtt cgatgtgttc ctgaacgtgg acaataatgt gaatgcgaat 1560

gagcttgaca aggcggagtt tgcggggagt tatactagtt tgccacatgt tcatagagct 1620

ggtgagacta atcatatcgc gactgttgat ttccagctgg cgataacgga actgttggag 1680

gatattggtt tggaagatga agatactatt gcggtgactc tggtgccaaa gagaggtggt 1740

gaaggtatct ccattgaaag tgcgacgatc agtcttgcag attgttaa 1788

<210> 29
<211> 154
<212> DNA

<213> Solanum tuberosum

<400> 29
ttagtctcta ttgaatctgc tgagattaca ctttgatgga tgatgctctg tttttgtttt 60

cttgttctgt tttttcctct gttgaaatca gctttgttgc ttgatttcat tgaagttgtt 120

attcaagaat aaatcagtta caattatgtt tggg 154

<210> 30
<211> 1691
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 30
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

ccttagtctc tattgaatct gctgagatta cactttgatg gatgatgctc tgtttttgtt 480

ttcttgttct gtttttttcct ctgttgaaat cagctttgtt gcttgatttc attgaagttg 540

ttattcaaga ataaatcagt tacaattatg gaattcaagg ttagaaatct tctctatttt 600

tggtttttgt ctgtttagat tctcgaatta gctaatcagg tgctgttata gcccttaatt 660

ttgagttttt tttcggttgt tttgatggaa aaggcctaaa atttgagttt ttttacgttg 720

gtttgatgga aaaggcctac aattggagtt ttccccgttg ttttgatgaa aaagccccta 780

gtttgagatt ttttttctgt cgattcgatt ctaaaggttt aaaattagag tttttacatt 840

tgtttgatga aaaaggcctt aaatttgagt ttttccggtt gatttgatga aaaagcccta 900

gaatttgtgt tttttcgtcg gtttgattct gaaggcctaa aatttgagtt tctccggctg 960

ttttgatgaa aaagccctaa atttgagttt ctccggctgt tttgatgaaa aagccctaaa 1020

tttgagtttt ttccccgtgt tttagattgt ttggttttaa ttctcgaatc agctaatcag 1080

ggagtgtgaa aagccctaaa atttgagttt ttttcgttgt tctgattgtt gtttttatga 1140

atttgcagat ggatatcctt ctttgatgct gatccataat tgtaactgat ttattcttga 1200

ataacaactt caatgaaatc aagcaacaaa gctgatttca acagaggaaa aaacagaaca 1260

agaaaacaaa aacagagcat catccatcaa agtgtaatct cagcagattc aatagagact 1320

aagcttttga ttttaatgtt tagcaaatgt cctatcagtt ttctcttttt gtcgaacggt 1380

aatttagagt ttttttgct atatggattt tcgtttttga tgtatgtgac aaccctcggg 1440

attgttgatt tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttggatat 1500

caatcttagt tttatatctt ttctagttct ctacgtgtta aatgttcaac acactagcaa 1560

tttggctgca gcgtatggat tatggaacta tcaagtctgt gggatcgata aatatgcttc 1620

tcaggaattt gagattttac agtctttatg ctcattgggt tgagtataat atagtaaaaa 1680

aatagtctag a 1691

<210> 31
<211> 1359
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 31
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

ccttagtctc tattgaatct gctgagatta cactttgatg gatgatgctc tgtttttgtt 480

ttcttgttct gttttttcct ctgttgaaat cagctttgtt gcttgatttc attgaagttg 540

ttattcaaga ataaatcagt tacaattatg gaattcgtgg taacttttac tcatctcctc 600

caattatttc tgatttcatg catgtttccc tacattctat tatgaatcgt gttatggtgt 660

ataaacgttg tttcatatct catctcatct attctgattt tgattctctt gcctactgaa 720

tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc tcttcttctt cttcttctca 780

gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg atatccttct ttgatgctga 840

tccataattg taactgattt attcttgaat aacaacttca atgaaatcaa gcaacaaagc 900

tgatttcaac agaggaaaaa acagaacaag aaaacaaaaa cagagcatca tccatcaaag 960

tgtaatctca gcagattcaa tagagactaa gcttttgatt ttaatgttta gcaaatgtcc 1020

tatcagtttt ctctttttgt cgaacggtaa tttagagttt tttttgctat atggattttc 1080

gtttttgatg tatgtgacaa ccctcgggat tgttgattta tttcaaaact aagagttttt 1140

gcttattgtt ctcgtctatt ttggatatca atcttagttt tatatctttt ctagttctct 1200

acgtgttaaa tgttcaacac actagcaatt tggctgcagc gtatggatta tggaactatc 1260

aagtctgtgg gatcgataaa tatgcttctc aggaatttga gattttacag tctttatgct 1320

cattgggttg agtataatat agtaaaaaaa tagtctaga 1359

<210> 32
<211> 1967
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 32
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420

taacttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat 480

tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt 540

tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600

tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660

gtagattccc ctttttgtag accacacatc acggatcctt agtctctatt gaatctgctg 720

agattacact ttgatggatg atgctctgtt tttgttttct tgttctgttt tttcctctgt 780

tgaaatcagc tttgttgctt gatttcattg aagttgttat tcaagaataa atcagttaca 840

attatggaat tcaaggttag aaatcttctc tatttttggt ttttgtctgt ttagattctc 900

gaattagcta atcaggtgct gttatagccc ttaattttga gttttttttc ggttgttttg 960

atggaaaagg cctaaaattt gagtttttt acgttggttt gatggaaaag gcctacaatt 1020

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gagtttctcc ggctgttttg atgaaaaagc cctaaatttg agtttttttcc ccgtgtttta 1320

gattgtttgg ttttaattct cgaatcagct aatcagggag tgtgaaaagc cctaaaattt 1380

gagttttttt cgttgttctg attgttgttt ttatgaattt gcagatggat atccttcttt 1440

gatgctgatc cataattgta actgatttat tcttgaataa caacttcaat gaaatcaagc 1500

aacaaagctg atttcaacag aggaaaaaac agaacaagaa aacaaaaaca gagcatcatc 1560

catcaaagtg taatctcagc agattcaata gagactaagc ttttgatttt aatgtttagc 1620

aaatgtccta tcagttttct ctttttgtcg aacggtaatt tagagttttt tttgctatat 1680

ggattttcgt ttttgatgta tgtgacaacc ctcgggattg ttgatttatt tcaaaactaa 1740

gagtttttgc ttattgttct cgtctatttt ggatatcaat cttagtttta tatcttttct 1800

agttctctac gtgttaaatg ttcaacacac tagcaatttg gctgcagcgt atggattatg 1860

gaactatcaa gtctgtggga tcgataaata tgcttctcag gaatttgaga ttttacagtc 1920

tttatgctca ttgggttgag tataatatag taaaaaaata gtctaga 1967

<210> 33
<211> 1635
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 33
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300

gccttccgct aagggatagc cacccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420

taacttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat 480

tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt 540

tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600

tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660

gtagattccc ctttttgtag accacacatc acggatcctt agtctctatt gaatctgctg 720

agattacact ttgatggatg atgctctgtt tttgttttct tgttctgttt tttcctctgt 780

tgaaatcagc tttgttgctt gatttcattg aagttgttat tcaagaataa atcagttaca 840

attatggaat tcgtggtaac ttttactcat ctcctccaat tatttctgat ttcatgcatg 900

tttccctaca ttctattatg aatcgtgtta tggtgtataa acgttgtttc atatctcatc 960

tcatctattc tgattttgat tctcttgcct actgaatttg accctactgt aatcggtgat 1020

aaatgtgaat gcttcctctt cttcttcttc ttctcagaaa tcaatttctg ttttgttttt 1080

gttcatctgt agcttgatat ccttctttga tgctgatcca taattgtaac tgatttattc 1140

ttgaataaca acttcaatga aatcaagcaa caaagctgat ttcaacagag gaaaaaacag 1200

aacaagaaaa caaaaacaga gcatcatcca tcaaagtgta atctcagcag attcaataga 1260

gactaagctt ttgattttaa tgtttagcaa atgtcctatc agttttctct ttttgtcgaa 1320

cggtaattta gagtttttt tgctatatgg attttcgttt ttgatgtatg tgacaaccct 1380

cgggattgtt gatttatttc aaaactaaga gtttttgctt attgttctcg tctattttgg 1440

atatcaatct tagttttata tcttttctag ttctctacgt gttaaatgtt caacacacta 1500

gcaatttggc tgcagcgtat ggattatgga actatcaagt ctgtgggatc gataaatatg 1560

cttctcagga atttgagatt ttacagtctt tatgctcatt gggttgagta taatatagta 1620

aaaaaatagt ctaga 1635

<210> 34
<211> 240
<212> DNA
<213> Solanum tuberosum

<400> 34
gtccatgatg tcttcagggt ggtagcattg actgatggca tcatagtttt ttttttaaaa 60

gtatttcctc tatgcatatt attagtatcc aataaattta ctggttgttg tacatagaaa 120

aagtgcattt gcatgtatgt gtttctctga aattttcccc agtttttggt gctttgcctt 180

tggagccaag tctctatatg tataagaaaa ctaagaacaa tcacatatat caaatattag 240

<210> 35
<211> 228
<212> DNA
<213> Solanum tuberosum

<400> 35
acgaacttgt gatcgcgttg aaagatttga acgctacata gagcttcttg acgtatctgg 60

caatattgca tcagtcttgg cggaatttca tgtgacaaca aggtttgcaa ttctttccac 120

tattagtagt gcaacgatat acgcagagat gaagtgctga acaaacatat gtaaaatcga 180

tgaatttatg tcgaatgctg ggacgggctt cagcaggttt tgcttagt 228

<210> 36
<211> 2204
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 36
ccgcggtttt ctctccatcg cgtcagaggc cggttttcgt cggcatcgaa gagggccact 60

cgtttaccgt catttgccaa agcagcgcaa aggcccatga gtgcggtggt tttgccagca 120

ccccctttga aagagcaaaa cgtcaaaagt tgcatattct gatcccgcct gtcctgtgaa 180

acggagtgca tttgtatttt tgttcgtata aatgtttttg tgattatcga tgagtaaaag 240

cgttgttaca ctatttttta tttcaaattc gttataatta aattgcaatt gtagcaatta 300

tattcggttt ttcctgtaaa tatactgttg atttcatatc gagtagggct agactttaat 360

ctgtctaccc gggcacattt cgtgctggag tattcagacc ttccgctttt tttggaggaa 420

gctatgtcaa aacacaccag agtcacgtcg agtgagactg ccatcaacca gcatcgatcc 480

ctgaacgttg aagggtttaa ggtcgtgagt gcccgtctgc gatcggccga gtatgaaacc 540

ttttcctatc aagcgcgcct gctgggactt tcggatagta tggcaattcg cgttgcggtg 600

cgtcgcatcg ggggctttct cgaaatagat gcacacaccc gagaaaagat ggaagccata 660

cttcagtcca tcggaatact ctcaagtaat gtatccatgc ttctatctgc ctacgccgaa 720

gaccctcgat cggatctgga ggctgtgcga gatgaacgta ttgcttttgg tgaggctttc 780

gccgccctcg atggcctact ccgctccatt ttgtccgtat cccggcgacg gatcgacggt 840

tgctcgctat tgaaaggtgc cttgtagcac ttgaccacgc acctgacggg agaaaattgg 900

atgcccgatc gcgctcaagt aatcattcgc attgtgccag gaggtggaac caagaccctt 960
cagcagataa tcaatcagtt ggagtacctg tcccgtaagg gaaagctgga actgcagcgt 1020
tcagcccggc atctcgatat tcccgttccg ccggatcaaa tccgtgagct tgcccaaagc 1080
tgggttacgg aggccgggat ttatgacgaa agtcagtcag acgatgatag gcaacaagac 1140
ttaacaacac acattattgt aagcttcccc gcaggtaccg accaaaccgc agcttatgaa 1200
gccagccggg aatgggcagc cgagatgttt gggtcaggat acgggggtgg ccgctataac 1260
tatctgacag cctaccacgt cgaccgcgat catccacatt tacatgtcgt ggtcaatcgt 1320
cgggaacttc tggggcacgg gtggctgaaa atatccaggc gccatcccca gctgaattat 1380
gacggcttac ggaaaaagat ggcagagatt tcacttcgtc acggcatagt cctggatgcg 1440
acttcgcgag cagaaagggg aatagcagag cgaccaatca catatgctga acatcgccgc 1500
cttgagcgga tgcaggctca aaagattcaa ttcgaagata cagattttga tgagacctcg 1560
cctgaggaag atcgtcggga cctcagtcaa tcgttcgatc catttcgatc ggacccatct 1620
accggcgaac cggaccgtgc aacccgacat gacaaacaac cgcttgaaca gcacgcccgt 1680
ttccaggagt ccgccggctc cagcatcaaa gccgacgcac ggatccgcgt atcattggag 1740
agcgagcgga gtgcccaacc atccgcgtcc aaaatccctg taattgggca tttcgggatt 1800
gagacttcct atgtcgctga agccagcgtg cgcaaacgaa gcggcatttt cggtacttct 1860
cgcccggtga ctgacgttgc catgcacaca gtcaagcgcc agcagcgatc aaaacgacgt 1920
aatgacgagg aggcaggtcc gagcggagca aaccgtaaag gattgaaggc tgcgcaagtt 1980
gattccgagg caaatgtcgg tgagcaagac actcgcgatg acagcaacaa ggcggctgat 2040
ccggtgtctg cttccatcgg taccgagcaa ccggaagctt ctccaaagcg tccgcgtgac 2100
cgtcacgatg gagaattggg tggacgcaaa cgtgcaagag gtaatcgtcg ctcgagctcg 2160
agcgggggga cctagagaca ggaaggaccg aataatggcc gcgg 2204

<210> 37
<211> 1621
<212> DNA
<213> Solanum tuberosum

<400> 37
atggcttctg tgctggcttc tctgtttcca aaactgggct ctttgggtac ttcagatcat 60
gcttctgttg tatccatcaa cctctttgtg gcactccttt gtgcttgcat catcattggt 120
catctcttgg aggagaaccg ctgggttaat gagtccatta ctgccctcat aattggtttg 180
tgtacaggag tggttatctt gctcgtaagt ggtggaaaga gctcacacct tctggttttc 240
agtgaagatc tctttttcat atatgtactt cctccaatca tatttaatgc agggtttcag 300
gtaaaaaaga agcaattttt cgtaaacttc attactataa tgatgttcgg agccattggt 360
accctggtct catgtgccat tatatcatta ggtgccattc aaactttcaa gaagttggac 420
attgaatttc tagatattgg ggattatctt gcaattggag caatatttgc tgccacagat 480
tccgtctgca cattgcaggt cctacatcag gatgagacac ccctccttta cagtcttgta 540

tttggagaag gagttgtaaa tgatgctaca tcggtggtgc ttttcaatgc tattcaaaac 600
ttcgacctta cgagcatgaa tcccagtata gccctcagtt tccttggcaa cttcttctat 660
ctgttccttg ctagcacttt actgggagca ggaactggtc ttcttagtgc ttacattatc 720
aagaagctat attttggcag gcactccaca gatcgtgagg ttgcccttat gatgctcatg 780
gcttacttat catacttgct ggccgaatta ttctatttga gtgggattct caccgtcttt 840
ttctgtggta ttgtaatgtc tcactacact tggcacaatg tgaccgagag ttcaagagtc 900
actacaaggc acacttttgc aactttgtca tttcttgcag agactttcct cttcctctat 960
gtcggcatgg atgctttgga tatcgagaag tggaaatttg ttggtgacag gcctggatta 1020
tcaatttccg tgagttcaat actgatggga ctaatcttgc ttgggagagc tgcctttgtt 1080
tttccattat cattcttatc caacttaatg aagaaatcct cggagcaaaa aattaccttt 1140
aggcagcaag tgataatatg gtgggcaggt ttgatgagag gcgcagtgtc catggcactg 1200
gcatataata agttcactcg tgggggacac actcaactgc aggacaatgc aataatgatt 1260
accagcacga taaccattgt tctattcagc acaatggtat tcggtttaat gacaaaaccc 1320
cttataagtc tcctgctgcc accacagagg caattgagta cagtgtcatc aggcgcaaat 1380
actccaaagt ctctaacagc cccactccta ggcagtcgag aggactctga agttgattta 1440
aatgttccag atcttcctca cccaccaagt ttgaggatgc tacttaccgc accaagtcat 1500
aaagtgcatc ggtactggcg caagtttgac gatgcattca tgcgccctat gtttggtggt 1560
cggggatttg ctcctcctgc ccctggttct ccaacggaac agggtccatg aggtaccaat 1620
c 1621

<210> 38
<211> 1620
<212> DNA
<213> Solanum tuberosum

<400> 38
atggcttctg tgctggcttc tctgtttcca aaactgggct ctttgggtac ttcagatcat 60
gcttctgttg tatccatcaa cctctttgtg gcactccttt gtgcttgcat catcattggt 120
catctcttgg aggagaaccg ctgggttaat gagtccatta ctgccctcat aattggtttg 180
tgtacaggag tggttatctt gctcgtaagt ggtggaaaga actcacacct tctggttttc 240
agtgaagatc tctttttcat atatgtactt cctccaatca tatttaatgc agggtttcag 300
gtaaaaaaga agcaattttt cgtgaacttc attactataa tgatgttcgg agccattggt 360
accctggtct catgtgccat tatatcatta ggtgcaattc aaactttcaa gaagttggac 420
attgaatttc tagatattgg ggattatctt gcaattggag caatatttgc tgccacagat 480
tccgtctgca cattgcaggt cctacatcag gatgagacac ccctccttta cagtcttgta 540
tttggagaag gagttgtaaa tgatgctaca tcggtggtgc ttttcaatgc tattcaaaac 600
tttgacctta cgagcgtgaa tcccagtata gccctcagtt tccttggcaa cttcttctat 660
ctgttccttg ctagcacttt actgggagca ggaactggtc ttcttagtgc ttacattatc 720

aagaagctgt attttggcag gcactccaca gatcgtgagg ttgcccttat gatgctcatg 780

gcttacttat catacatgct ggctgaacta ttctatttga gtgggattct cactgtattt 840

ttctgtggta ttgtaatgtc tcattacact tggcacaatg tgaccgagag ttcaagagtc 900

actacaaggc acgcttttgc aactttgtca tttcttgcag agactttcct cttcctctat 960

gtcggcatgg atgctttgga tatcgagaag tggaaatttg ttggtgacag gcctggatta 1020

tcaatttccg tgagttcaat actgatggga ttaatcttgc tggggagagc tgcctttgtt 1080

tttccattat cattcttctc caacttaatg aagaaatcct cggagcaaaa aattaccttt 1140

aggcagcaag tgataatatg gtgggcaggt ttgatgagag gcgcagtgtc catggcactg 1200

gcatataata agttcactcg tgggggacac actcaactgc aggacaatgc aataatgatt 1260

accagcacga taaccattgt tctattcagc acaatggtat tcggtttaat gacaaaaccc 1320

cttataagtc tcctgctgcc accacagagg caattgagta cagtgtcatc aggtgcaaat 1380

actccaaagt ctctaacagc cccactccta ggcagtcgag aggactctga agttgattta 1440

aatgttccag atcttcctca cccaccaagt ttgaggatgc tacttaccgc accaagtcat 1500

aaagtgcatc ggtactggcg caagtttgac gatgcattca tgcgccctat gtttggtggt 1560

cggggatttg ctcctcctgc ccctggttct ccaacggaac agggtccatg aggtacaatc 1620

<210> 39
<211> 747
<212> DNA
<213> Solanum tuberosum

<400> 39
atggaaaatt cggtacccag gactgtagaa gaagtattca acgatttcaa aggtcgtaga 60

gctggtttaa tcaaagcact aactacagat gtcgagaagt tttatcaatc gtgtgatcct 120

gaaaaggaga acttgtgtct ctatgggctt cctaatgaaa catgggaagt aaacctccct 180

gtagaggagg tgcctccaga acttccggag ccagcattgg gcataaactt cgcacgtgat 240

ggaatgcaag agaaagactg gttatcactt gttgctgttc acagtgattc atggctgctt 300

tctgttgcat tttactttgg tgcaaggttt gggttcggca agagtgaaag gaagaggctt 360

ttccaaatga taaatgatct cccaacagtg tttgaagttg ttaccggagc tgctaaacag 420

acacgtgatc cccctcacaa caatagcaac aaaagcaaat caagtggaaa gcctcgacag 480

ccagagtccc aactcaaggc agtaaaggtg tctccaccta aaatggagaa cgacagtggg 540

gaggaggaag aagaagaaga ggatgaacaa ggagcaactc tctgtggagc ttgtggtgat 600

aattatgcca ctgatgaatt ctggatttgc tgtgatattt gtgagagatg gttccatggc 660

aaatgtgtga agattacccc agcaaaagct gagcatatca agcagtacaa gtgtcctagt 720

tgcagtagca agagagctag agtttaa 747

<210> 40
<211> 741
<212> DNA
<213> Solanum tuberosum

<400> 40
tgacatctgc caataaagcc aagaataatt ggcattaaca tgaccaaaaa aatggtttgg 60

cagcattaag tcaaataaaa aagctacttt aatataaaat aatattaaaa tgcttaataa 120

ccaacagttt ataagaaggt taatgttaac atggatgagg aatgaccaaa aggggaatta 180

tatattaacc tttaaatcaa tctaattctc tctttttgtt tctagctata tttactcgat 240

agataaactc tcttacttga cgaatttttt gatacaagaa gacatatttc atcatgattt 300

taattcgtcg tgtcaaattt attaaatagt ttaattttaa tcgtaaattt agatatgaaa 360

tttaaaaaaa aataaatata tacatatttg aagaatacat aaaaagtaca tataaatcac 420

aaatatttaa taattcaaga tattaaaaca catagaaaaa taattactta caaagaaatt 480

cttatttgaa tcctctaaat tcgagaagtg caacacaaac tgagacgaag aaaatgaata 540

atatttgata agaaatttat tataattgaa tgaccattta agtaattacg ggtaataaca 600

acacaataag gaactgtagt cattttaat acatggcaag gaatatgaga gtgtgatgag 660

tctataaata gaaggcttca ttagtgtaga ggagtcacaa acaagcaata cacaaataaa 720

attagtagct taaacaagat g 741

<210> 41
<211> 25
<212> DNA
<213> Agrobacterium sp.

<400> 41
tgacaggata tattggcggg taaac 25

<210> 42
<211> 25
<212> DNA
<213> Agrobacterium sp.

<400> 42
tggcaggata tattgtggtg taaac 25

<210> 43
<211> 25
<212> DNA
<213> Agrobacterium sp.

<400> 43
tggcaggata tataccgttg taatt 25

<210> 44
<211> 25
<212> DNA
<213> Agrobacterium sp.

<400> 44
cggcaggata tattcaattg taatt 25

<210> 45
<211> 25
<212> DNA
<213> Agrobacterium sp.

<400> 45
tggtaggata tataccgttg taatt 25

<210> 46
<211> 25
<212> DNA
<213> Agrobacterium sp.

<400> 46
tggcaggata tatggtactg taatt 25

<210> 47
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<221> modified_base
<222> (16)..(16)
<223> a, c, g, t, unknown or other

<400> 47
ygryaggata tatwsnvbkg taawy 25

<210> 48
<211> 25
<212> DNA
<213> Rhizobium leguminosarum

<400> 48
cggcaggata tatcctgatg taaat 25

<210> 49
<211> 25
<212> DNA
<213> Thermoanaerobacter tengcongensis

<400> 49
tggcaggagt tattcgaggg taaac 25

<210> 50
<211> 25
<212> DNA
<213> Arabidopsis thaliana

<400> 50
tgacaggata tatcgtgatg tcaac 25

<210> 51
<211> 25
<212> DNA
<213> Arabidopsis thaliana

<400> 51
gggaagtaca tattggcggg taaac 25

<210> 52
<211> 25

<212> DNA
<213> Oryza sativa

<400> 52
ttacaggata tattaatatg tatga 25

<210> 53
<211> 25
<212> DNA
<213> Homo sapiens

<400> 53
taacatgata tattcccttg taaat 25

<210> 54
<211> 25
<212> DNA
<213> Solanum tuberosum

<400> 54
tgacaggata tatggtaatg taaac 25

<210> 55
<211> 25
<212> DNA
<213> Solanum tuberosum

<400> 55
tggcaggata tataccgatg taaac 25

<210> 56
<211> 292
<212> DNA
<213> Saccharomyces cerevisiae

<400> 56
ttcttcgcca gaggtttggt caagtctcca atcaaggttg tcggcttgtc taccttgcca 60

gaaatttacg aaaagatgga aaagggtcaa atcgttggta gatacgttgt tgacacttct 120

aaataagcga atttcttatg atttatgatt tttattatta ataagttat aaaaaaaata 180

agtgtataca aattttaaag tgactcttag gttttaaaac gaaaattctt attcttgagt 240

aactctttcc tgtaggtcag gttgctttct caggtatagc atgaggtcgc tc 292

<210> 57
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> modified_base
<222> (14)..(14)
<223> a, c, g, t, unknown or other

<220>
<221> modified_base
<222> (16)..(16)
<223> a, c, g, t, unknown or other

<220>
<221> modified_base
<222> (18)..(18)
<223> a, c, g, t, unknown or other

<400> 57
tgrcaggata tatnvndntg taaac 25

<210> 58
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 58
ccgcggtgat cacaggcagc aac 23

<210> 59
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 59
aagcttccag ccagccaaca gctccccgac 30

<210> 60
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 60
aagcttggct actagtgcga gatctctaag agaaaagagc gttta 45

<210> 61
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 61
gcatgctcga gataggtgac cacatacaaa tggacgaacg g 41

<210> 62
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 62
actagtgttt acccgccaat atatcctgtc agag 34

<210> 63
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 63
aagctttggc aggatatatt gtggtgtaaa cgaag 35

<210> 64
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 64
cggtgtaagt gaactgcagt tgccatg 27

<210> 65
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 65
catcggcctc actcatgagc agattg 26

<210> 66
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 66
cacgctaagt gccggccgtc cgag 24

<210> 67
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 67
tcctaatcga cggcgcaccg gctg 24

<210> 68
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 68
aaagttgaat tcaaatgaga aatttattc 29

<210> 69
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 69
ttttaagctt tcataataac attctaat 28

<210> 70
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 70
gaaccatgca tctcaatc 18

<210> 71
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 71
gtcaggatcc ctaccaagct acagatgaac 30

<210> 72
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 72
ggatccgagt gtgggtaagt aattaag 27

<210> 73
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 73
gaattctgtg ctctctatgc aaatctagc 29

<210> 74
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 74
ggaacattga agctgtgg 18

<210> 75
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 75
cgaattcatg gcaagcttgt gcaatag 27

<210> 76
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 76
cgaattctta acaatctgca agactgatcg 30

<210> 77
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 77
gagagatctt gataagacac aacc 24

<210> 78
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> misc_feature
<222> (7)
<223> "a" to "c" mutation

<220>
<221> misc_feature
<222> (14)
<223> "a" to "c" mutation

<220>
<221> misc_feature
<222> (17)
<223> "a" to "c" mutation

<400> 78
cattaccata agcccactgt atattagctt gttgc 35

<210> 79
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 79
gtgcttatag aattggtggc 20

<210> 80
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 80
tagttcccgg gagttcagtg 20

<210> 81
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> misc_feature
<222> (17)
<223> "a" to "g" mutation

<220>
<221> misc_feature
<222> (29)
<223> "a" to "t" mutation

<400> 81
ctcccgggaa ctataggaaa cattcctctc ggtcctgtcc acatctggtc 50

<210> 82
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 82
gtgtgatatc tgttcttttc c 21

<210> 83
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 83
gaatgagctt gacaaggcgg ag 22

<210> 84
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 84
ctggcgataa cggaactgtt g 21

<210> 85
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 85
gtccatgatg tcttcagggt ggta 24

<210> 86
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 86
ctaatatttg atatatgtga ttgt 24

<210> 87
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 87
acgaacttgt gatcgcgttg aaag 24

<210> 88
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 88
actaagcaaa acctgctgaa gccc 24

<210> 89
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 89
cccgggatgg cttctgtgct ggct 24

<210> 90
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 90
ggtacctcat ggaccctgtt ccgt 24

<210> 91
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 91
cccgggtatg gaaaattcgg tacccaggac tg 32

<210> 92
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 92
actagttaaa ctctagctct cttgc 25

<210> 93
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<221> modified_base
<222> (2)..(2)
<223> a, c, g or t

<220>
<221> modified_base
<222> (6)..(6)
<223> a, c, g or t

<220>
<221> modified_base
<222> (10)..(15)
<223> a, c, g or t

<400> 93
angatntatn nnnnngt 17

<210> 94
<211> 25
<212> DNA
<213> Triticum sp.

<400> 94
tggcaggata tatgagtgtg taaac 25

<210> 95
<211> 26
<212> DNA
<213> Triticum sp.

<400> 95
ttggcaggat atatccctct gtaaac 26

<210> 96
<211> 244
<212> DNA
<213> Solanum tuberosum

<400> 96
gtccatgatg tcttcagggt ggtagcattg actgattgca tcatagttgt ttttttttt 60

taaagtattt cctctatgca tattattagc atccaataaa tttactggtt gttgtacata 120

gaaaaagtgc atttgcatgt atgtgtttct ctgaaatttt ccccagtttt tggtgctttg 180

cctttggagc caagtctcta tatgtaataa gaaaactaag aacaatcaca tatatcaaat 240

atta 244

<210> 97
<211> 227
<212> DNA
<213> Solanum tuberosum

<400> 97
acgaacttgt gatcgcgttg aaagatttga acgctacata gagcttcttg acgtatctgg 60

caatattgca tcagtcttgg cggaatttca tgtgacaaaa ggtttgcaat tctttccact 120

attagtagtg caacgatata cgcagagatg aagtgctgaa caaacatatg taaaatcgat 180

gaatttatgt cgaatgctgg gacgggcttc agcaggtttt gcttagt 227

<210> 98
<211> 416
<212> DNA
<213> Solanum tuberosum

<400> 98
gtttacatta ccatatatcc tgtcagaggt atagaggcat gactggcatg atcactaaat 60

tgatgcccac agaggagact tataacctac aggggcacgt agttctagga cttgaaagtg 120

actgaccgta gtccaactcg gtataaagcc tactcccaac taaatatatg aaatttatag 180

cataactgca gatgagctcg attctagagt aggtaccgag ctcgaattcc ttactcctcc 240

acaaagccgt aactgaagcg acttctattt ttctcaacct tcggacctga cgatcaagaa 300

tctcaatagg tagttcttca taagtgagac tatccttcat agctacactt tctaaaggta 360

cgatagattt tggatcaacc acacacactt cgtttacatc ggtatatatc ctgcca 416

<210> 99
<211> 181
<212> PRT
<213> Solanum tuberosum

<400> 99
Met Arg Asn Leu Phe Pro Ile Leu Met Leu Ile Thr Asn Leu Ala Leu
1 5 10 15

Asn Asn Asp Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Tyr Asn Leu
20 25 30

Ile His Ala Thr Cys Arg Glu Thr Pro Tyr Tyr Ser Leu Cys Leu Thr
35 40 45

Thr Leu Gln Ser Gly Pro Arg Ser Asn Glu Val Glu Gly Gly Asp Ala
50 55 60

Ile Thr Thr Leu Gly Leu Ile Met Val Asp Ala Val Lys Ser Lys Ser
65 70 75 80

Ile Glu Ile Met Glu Lys Ile Lys Glu Leu Glu Lys Ser Asn Pro Glu
85 90 95

Trp Arg Ala Pro Leu Ser Gln Cys Tyr Val Ala Tyr Asn Ala Val Leu
100 105 110

Arg Ala Asp Val Thr Val Ala Val Glu Ala Leu Lys Lys Gly Ala Pro
115 120 125

Lys Phe Ala Glu Asp Gly Met Asp Asp Val Val Ala Glu Ala Gln Thr
130 135 140

Cys Glu Tyr Ser Phe Asn Tyr Tyr Asn Lys Leu Asp Phe Pro Ile Ser
145 150 155 160

Asn Leu Ser Arg Glu Ile Ile Glu Leu Ser Lys Val Ala Lys Ser Ile
165 170 175

Ile Arg Met Leu Leu
180

<210> 100
<211> 172
<212> PRT
<213> Nicotiana tabacum

<400> 100
Met Arg Asn Leu Phe Pro Ile Phe Met Leu Ile Thr Asn Leu Ala Phe
1 5 10 15

Asn Asp Asn Asn Asn Ser Asn Asn Ile Ile Asn Thr Thr Cys Arg Ala

20 25 30

Thr Thr Asn Tyr Pro Leu Cys Leu Thr Thr Leu His Ser Asp Pro Arg
35 40 45

Thr Ser Glu Ala Glu Gly Ala Asp Leu Thr Thr Leu Gly Leu Val Met
50 55 60

Val Asp Ala Val Lys Leu Lys Ser Ile Glu Ile Met Lys Ser Ile Lys
65 70 75 80

Lys Leu Glu Lys Ser Asn Pro Glu Leu Arg Leu Pro Leu Ser Gln Cys
85 90 95

Tyr Ile Val Tyr Tyr Ala Val Leu His Ala Asp Val Thr Val Ala Val
100 105 110

Glu Ala Leu Lys Arg Gly Val Pro Lys Phe Ala Glu Asn Gly Met Val
115 120 125

Asp Val Ala Val Glu Ala Glu Thr Cys Glu Phe Ser Phe Lys Tyr Asn
130 135 140

Gly Leu Val Ser Pro Val Ser Asp Met Asn Lys Glu Ile Ile Glu Leu
145 150 155 160

Ser Ser Val Ala Lys Ser Ile Ile Arg Met Leu Leu
165 170

<210> 101
<211> 166
<212> PRT
<213> Nicotiana tabacum

<400> 101
Met Lys Asn Leu Ile Phe Leu Thr Met Phe Leu Thr Ile Leu Leu Gln
1 5 10 15

Thr Asn Ala Asn Asn Leu Val Glu Thr Thr Cys Lys Asn Thr Pro Asn
20 25 30

Tyr Gln Leu Cys Leu Lys Thr Leu Leu Ser Asp Lys Arg Ser Ala Thr
35 40 45

Gly Asp Ile Thr Thr Leu Ala Leu Ile Met Val Asp Ala Ile Lys Ala
50 55 60

Lys Ala Asn Gln Ala Ala Val Thr Ile Ser Lys Leu Arg His Ser Asn
65 70 75 80

Pro Pro Ala Ala Trp Lys Gly Pro Leu Lys Asn Cys Ala Phe Ser Tyr
85 90 95

Lys Val Ile Leu Thr Ala Ser Leu Pro Glu Ala Ile Glu Ala Leu Thr
100 105 110

Lys Gly Asp Pro Lys Phe Ala Glu Asp Gly Met Val Gly Ser Ser Gly
115 120 125

Asp Ala Gln Glu Cys Glu Glu Tyr Phe Lys Gly Ser Lys Ser Pro Phe
130 135 140

Ser Ala Leu Asn Ile Ala Val His Glu Leu Ser Asp Val Gly Arg Ala
145 150 155 160

Ile Val Arg Asn Leu Leu
165

<210> 102
<211> 277
<212> DNA
<213> Solanum tuberosum

<400> 102
ctggcgataa cggaactgtt ggaggatatt ggtttggaag atgaagatac tattgcggtg 60

actctggtgc caaagagagg tggtgaaggt atctccattg aaagtgcgac gatcagtctt 120

gcagattgtt aattagtctc tattgaatct gctgagatta cactttgatg gatgatgctc 180

tgtttttgtt ttcttgttct gttttttcct ctgttgaaat cagctttgtt gcttgatttc 240

attgaagttg ttattcaaga ataaatcagt tacaatt 277

<210> 103
<211> 300
<212> DNA
<213> Solanum tuberosum

<400> 103
ctggcgataa cggaactgtt ggaggatatt ggattggaag atgaagatac tattgcggta 60

actttggttc caaaagtagg tggtgaaggt gtatccattg aaagtgtgga gatcaagctt 120

gaggattgtt aagtcctcat gagttggtgg ctacggtacc aaattttatg tttaattagt 180

attaatgtgt gtatgtgttt gattatgttt cggttaaaat gtatcagctg gatagctgat 240

tactagcctt gccagttgtt aatgctatgt atgaaataaa taaataaatg gttgtcttct 300

<210> 104
<211> 296
<212> DNA
<213> Solanum tuberosum

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, t, unknown or other

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, t, unknown or other

<220>
<221> modified_base
<222> (223)..(223)
<223> a, c, g, t, unknown or other

<400> 104
ctggcgataa cggaactgtt ggaggataat ggattggaag atgaaggtac tatngcggta 60

actttggttc caaaagttgg tggtgaaggt gtatccattg aaagtgcgga gatcaagctt 120

gaggattgtt aagtcctcat gagttggtgg ctatggtacc aaattntatg tttaattagt 180

attaatgtgt gtgtttgatt atgtttcggt taaaatgtat canctggata gctgattact 240

agccttccca gttgttaatg ctatgtatga aatacataaa taaatggttg tcttcc 296

<210> 105
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 105
ygrcaggata tat 13

<210> 106
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> modified_base
<222> (11)..(15)
<223> a, c, g, t, unknown or other

<400> 106
caggatatat nnnnnkgtaa ac 22

<210> 107
<211> 25
<212> DNA
<213> Arabidopsis thaliana

<400> 107
tggtaggata cattctgatg tagat 25

<210> 108
<211> 25
<212> DNA
<213> Arabidopsis thaliana

<400> 108
tgacaggata tatcgtgatg tcaac 25

<210> 109
<211> 25
<212> DNA

<213> Arabidopsis thaliana

<400> 109
tggtaggata cattctgatg tagta 25

<210> 110
<211> 25
<212> DNA
<213> Oryza sativa

<400> 110
tggcaggata tcttggcatt taaac 25

<210> 111
<211> 25
<212> DNA
<213> Oryza sativa

<400> 111
tgtcaggata tatatcgata tgaac 25

<210> 112
<211> 25
<212> DNA
<213> Oryza sativa

<400> 112
tgtcaggata tatatcgata tgaac 25

<210> 113
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> modified_base
<222> (14)..(18)
<223> a, c, g, t, unknown or other

<400> 113
ygrcaggata tatnnnnnkg taaac 25

<210> 114
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 114
gaccacaccc gtcctgtg 18

<210> 115
<211> 13
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 115
ygrcaggata tat 13

<210> 116
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 116
atggcgacca ca 12

<210> 117
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> modified_base
<222> (11)..(15)
<223> a, c, g, t, unknown or other

<400> 117
caggatatat nnnnnkgtaa ac 22

<210> 118
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 118
gtccaacttg cacaggaaag ac 22

<210> 119
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 119
catggatgaa atactcctga gc 22

<210> 120
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 120

gttcagacaa gaccacagat gtga 24

<210> 121
<211> 74
<212> PRT
<213> Solanum tuberosum

<400> 121
Met Ser Ser Thr Ser Asn Val Gly Gln Asp Cys Leu Ala Glu Val Thr
1 5 10 15

Ile Ser Tyr Gln Trp Val Gly Arg Val Ile Asn Tyr Asn Phe Phe Leu
20 25 30

Leu Ile His Trp Tyr Thr Val Val Glu Ala Ser Thr Gly Ile Thr Phe
35 40 45

Gln Ile Phe Pro Ile Gly Ile Arg Ser Glu Asp Asp Arg Ser Phe Tyr
50 55 60

Glu Lys Ala Asp Arg Phe Ala Trp Val Thr
65 70

<210> 122
<211> 51
<212> PRT
<213> Solanum tuberosum

<400> 122
Met Ser Ser Glu Ser Thr Phe Ser Lys Thr Pro Asn Gly Arg Ala Thr
1 5 10 15

Asp Val Gly Ile Pro Thr Glu Glu Gly Thr Phe Pro Phe Arg Tyr Ala
20 25 30

Ile Leu Arg Asp Leu Ala Pro Thr Ile Ser Leu Val Asn Ser Ser Ala
35 40 45

Asp Ile Ala
50

<210> 123
<211> 76
<212> PRT
<213> Solanum tuberosum

<400> 123
Met Ser Glu Gly Val Gly Phe Lys Ser Lys Ile Leu Pro Ser Phe Ala
1 5 10 15

Trp Arg Ser Ala Asn Ile Leu Gly Ser Lys His Val Ala Lys Gln Thr
20 25 30

Phe Pro Phe Leu Ala Arg Thr Glu Thr Cys Glu Arg Thr Ser Gly Met
35 40 45

Ser Gly Val Ile Arg Ala Thr Ala Pro Ser Gly Ile Ser Ser Ser Pro
50 55 60

Leu Thr Asp Phe Ala Thr Lys Ile Val Gly Phe Ser
65 70 75

<210> 124
<211> 62
<212> PRT
<213> Solanum tuberosum

<400> 124
Val Cys Ser Pro Ala Leu Lys Ala Asp Lys Ser Lys Ser Ala Asp Gly
1 5 10 15

Thr Cys Val Asp His Ser Arg Arg Leu Ile Val Val Leu Val Leu Tyr
20 25 30

Pro Gly Met Gly Thr Ser Tyr Ala Thr Ala Phe Ile Ser Ser Pro Pro
35 40 45

Ile Gln Tyr Leu Phe Pro Ser Asp Pro Val Glu Thr Phe Pro
50 55 60

<210> 125
<211> 50
<212> PRT
<213> Solanum tuberosum

<400> 125
Met Leu Gly Ser Leu Val Leu Pro Lys Ser Pro Glu Asn Arg Lys Gln
1 5 10 15

Ala Val Pro Asn Pro His Phe Gln Glu Gln His Leu Val Pro Glu Lys
20 25 30

Pro His Phe Leu Asp Cys Gly Gln Gly Phe Ser Lys Leu Pro Gln Met
35 40 45

His Gln
50

<210> 126
<211> 65
<212> PRT
<213> Solanum tuberosum

<400> 126
Met Val Asn Phe Leu Thr Gln Gly Ile Val Asp Met Glu Thr Ala Phe
1 5 10 15

Gly Ser Pro Lys Met Gly Gly Phe Gly Lys Glu Gln Phe Gly Ala Cys
20 25 30

Val Ser Arg Ser Glu Met Asp Glu Ser Gly Ile Gly Ala Val Met Val
35 40 45

Glu Gln Val Cys Ser Ile Cys Ser Arg His Phe Val Leu Ser Met Gln
50 55 60

Ile
65

<210> 127
<211> 77
<212> PRT
<213> Solanum tuberosum

<400> 127
Met Leu Glu Gly Ser Met Trp Pro Trp Asn Gln Glu Ser Met Lys Arg
1 5 10 15

Ala Phe Leu Asn His His Phe Leu Met Leu His Leu Phe Pro Ala Gln
20 25 30

Arg Pro Pro Gln Ala Ala Asp Pro Val Cys Leu Lys His Gln His Met
35 40 45

His Cys Gly Cys Leu Ser Phe Gln Leu His Leu Ser Lys Leu Ala Pro
50 55 60

Gly Asp Thr Pro Leu Ile Ser Ser Met Phe Ala Leu Asp
65 70 75

<210> 128
<211> 49
<212> PRT
<213> Solanum tuberosum

<400> 128
Met Lys Leu Cys Ser Ser Ile Ile Leu Ser Ile Ile Lys Gln Lys Gln
1 5 10 15

Val Glu Ile Leu Arg Ala Cys Phe Gly Phe Pro Glu Thr Lys Thr Ile
20 25 30

Ser Val Phe Ser Ser Val Ser Trp Asn Trp His Ile Ile Cys Lys Ser
35 40 45

Leu

<210> 129
<211> 64
<212> PRT
<213> Solanum tuberosum

<400> 129
Met Thr Lys Lys Pro Asp Arg Lys Asp Asn Ile Met Pro Tyr Asn Phe
1 5 10 15

Pro Gly Thr Lys Phe Leu Gln Pro Ile Phe Arg Asn Phe Phe Leu Pro
20 25 30

```
Ser Leu Cys Asp Lys Leu Leu Lys Lys Ser Ile Ser Val Pro Gln Ala
        35                  40                  45

Ile Thr Pro Cys Trp Lys Val Gln Cys Gly His Gly Ile Lys Lys Ala
    50                  55                  60
```

<210> 130
<211> 115
<212> PRT
<213> Solanum tuberosum

<400> 130

```
Thr Ile Leu Lys Leu Asp Leu His Thr Phe Asn Gly His Phe Phe Thr
1               5                   10                  15

Ala Ser Phe Trp Asn Gln Ser His Arg Asn Ser Ile Phe Ile Phe Gln
            20                  25                  30

Ser Asn Ile Leu Gln Gln Phe Ser Tyr Arg Gln Leu Glu Ser Asn Thr
        35                  40                  45

Gly Asn Met Ile Ser Ile Thr Ser Met Asn Met Arg Gln Ala Ser Ile
    50                  55                  60

Thr Pro Cys Lys Leu Arg Leu Ile Lys Leu Ile Cys Ile His Ser Leu
65                  70                  75                  80

Val His Val Gln Lys His Ile Glu Pro Tyr Ile Val Pro Ile Ile Ile
                85                  90                  95

Arg Tyr Phe Ile Glu Cys Gln Tyr Leu Leu Leu Leu Ile Phe Leu Leu
            100                 105                 110

Cys Cys Pro
        115
```

<210> 131
<211> 122
<212> PRT
<213> Solanum tuberosum

<400> 131

```
Met Lys Gly Lys Glu Lys Pro Arg Glu Met Asn Leu Gln Phe Phe Thr
1               5                   10                  15

Thr Asn Phe Val Ser Thr Val Ala Ile Ser Thr Met Asn Ile Ser Leu
            20                  25                  30

Leu Phe Lys Ala Lys Arg Val Lys Gly Val Phe Ile Lys Phe Pro His
        35                  40                  45

Ser Thr Arg Ser Gln Leu Ile Leu Gly Tyr Val Leu Leu Ile Arg Arg
    50                  55                  60
```

```
Met Ser Arg Gly Ala Asp Ala Glu Phe Ser His Arg Arg Glu Leu Val
65                  70                  75                  80

Val Arg Asn Thr Ile Asp Leu Ile Gly Tyr Arg Arg Ala Thr Thr Val
                85                  90                  95

Tyr Tyr Ile Asn Thr Phe Phe Tyr Met Gly Ser Thr Thr Arg Leu Glu
            100                 105                 110

Ile Arg Arg Trp Tyr Arg Cys Ser Ser Arg
        115                 120
```

<210> 132
<211> 104
<212> PRT
<213> Solanum tuberosum

<400> 132

```
Met Glu Trp Ala Leu Ala Arg Asn Arg Ile Pro Phe Phe Tyr Cys Pro
1               5                   10                  15

Asn Ser Leu Arg Thr Ser His Gly Lys Gly Tyr Asp Phe His Arg Arg
            20                  25                  30

Lys Arg Ile Gln Ser Ser Thr Asn Leu Tyr Leu Leu Asn Pro Phe Phe
        35                  40                  45

Ser Arg Gln Leu Ile Ser Ile His Ser Thr Ser Cys Pro His Trp His
    50                  55                  60

Gly Gly Ser Lys Lys Ser Asp Leu Asn Arg Val Ser Arg Asn Tyr Pro
65                  70                  75                  80

Cys Leu His Arg Phe Phe Asp Glu Val Cys His Arg Ser Arg Cys Glu
                85                  90                  95

Pro Glu Tyr Glu Gly Cys Phe Gln
            100
```

<210> 133
<211> 92
<212> PRT
<213> Solanum tuberosum

<400> 133

```
Met Asn Asn Ile Thr His Ser Pro Ile Leu Ile Pro Phe Leu Glu Gln
1               5                   10                  15

Leu Asn Pro Phe Ile Ser Asn Cys His Met Gln Pro Ile Val Lys Ala
            20                  25                  30

Asn Thr Pro Ile Leu Asn Gly Asn Thr Lys Cys Arg His Ser Ala Asn
        35                  40                  45
```

Ile Phe Thr Asn Gly Asn Cys Ile Trp Glu Lys Pro Met Asn Lys Ile
50 55 60

Val Asp Gln His Gln Ile His Asn Ser Ile His Ile Ser Cys Glu Ser
65 70 75 80

Lys Val Phe Leu Val Val Pro Ser Glu Ser His Arg
85 90

<210> 134
<211> 57
<212> PRT
<213> Solanum tuberosum

<400> 134
Met Lys Phe Arg Tyr Pro Ser Pro Pro Asn Pro Ile Val Thr Ser Leu
1 5 10 15

Ile Ile Leu Cys Asn Ala Ile Pro Arg Ser Ile Asn Asp Val Asp Gly
20 25 30

Leu Ser Arg Ala Ile Lys Ser Tyr Ile Ser Leu Ser Ile Ser Gln Asn
35 40 45

Ala Ile Val Leu Ser Pro Thr Arg Ala
50 55

<210> 135
<211> 70
<212> PRT
<213> Solanum tuberosum

<400> 135
Met Val Asn Ile Met Thr Ser Ser Ser Met Ala Thr Lys Phe Pro Ser
1 5 10 15

Ile Thr Val Gln Cys Asn Ser Val Leu Pro Trp Gln Val Thr Ser Asn
20 25 30

Phe Ile Pro Phe Val Cys Val Leu Trp Val Glu Val Glu Tyr Lys Tyr
35 40 45

Gln Val Thr Thr Phe Lys His Asn Asn Leu Ile Ile Ile Ile His Ala
50 55 60

Ala Tyr Tyr Leu Phe Ser
65 70

<210> 136
<211> 51
<212> PRT
<213> Solanum tuberosum

<400> 136
Met Ala Lys Leu Val Thr His Glu Ile Glu Val Pro Leu Ser Ser Gln
1 5 10 15

Gly His Cys Glu Lys Met Asp His Leu Val Lys Arg Asn Ser Ser Ile
20 25 30

Asn Asn Arg Arg Ser Ile Cys Gln Ala Arg His Ala Arg Ile His Leu
35 40 45

Phe Val His
50

<210> 137
<211> 72
<212> PRT
<213> Solanum tuberosum

<400> 137
Met Phe Glu Thr Lys Leu Asn Ser Gly Val Val Trp Asn Asp Trp Leu
1 5 10 15

Thr Val Asn Ile Arg Asn Ser Asn Thr Pro Asn Thr Lys Leu Val Leu
20 25 30

Leu His His Val Val Arg Thr Val Pro Ser Ile Glu Ile Ala Asn Asn
35 40 45

Phe Val Phe Leu Ser Ser Arg Ser Pro Phe Thr Ile Asp Tyr Ala Thr
50 55 60

Ile Phe Pro Val Glu Ser Lys Phe
65 70

<210> 138
<211> 66
<212> PRT
<213> Solanum tuberosum

<400> 138
Met Leu Tyr Thr Ser Leu Tyr Ile Ser Tyr Leu Ser Asn Ser Met Leu
1 5 10 15

Leu Pro Ser Trp Thr Asn Leu His His Ser Tyr Ser Leu Asn Asn Leu
20 25 30

Ser Thr Tyr Leu Gly Leu Pro Leu Pro Gly Gly Asn Gln Asn Gln Phe
35 40 45

Leu Pro Gln Lys Gln Ala Gly Gln Gly Pro Ala Tyr Gln Lys His Leu
50 55 60

Arg Gln
65

<210> 139
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> modified_base
<222> (8)..(8)
<223> a, c, g, t, unknown or other

<220>
<221> modified_base
<222> (10)..(10)
<223> a, c, g, t, unknown or other

<220>
<221> modified_base
<222> (12)..(12)
<223> a, c, g, t, unknown or other

<400> 139
gtttacanhn bnatatatcc tgyca 25

<210> 140
<211> 244
<212> DNA
<213> Solanum tuberosum

<400> 140
gtccatgatg tcttcagggt ggtagcattg actgattgca tcatagtttt ttttttttt 60

ttaagtattt cctctatgca tattattagt atccaataaa tttactggtt gttgtacata 120

gaaaaagtgc atttgcatgt atgtgtttct ctgaaatttt ccccagtttt tggtgctttg 180

cctttggagc caagtctcta tatgtaataa gaaaactaag aacaatcaca tatatcaaat 240

atta 244

<210> 141
<211> 239
<212> DNA
<213> Solanum tuberosum

<400> 141
acgaacttgt gatcgcgttg aaagatttga acgctacttg gtcatccaca tagagcttct 60

tgacgtatct ggcaatattg catcagtctt ggcggaattt catgtgacaa aaggtttgca 120

attctttcca ctattagtag tgcaacgata tacgcagaga tgaagtgctg aacaaacata 180

tgtaaaatcg atgaatttat gtcgaatgct gggacgggct tcagcaggtt ttgcttagt 239